What is claimed is:

1. A method for modifying the genome of a gymnosperm which comprises cloning one or more angiosperm DNA sequences which code for genes necessary for production of angiosperm syringyl lignin monomer units, fusing one or more of the angiosperm DNA sequences to a promoter region associated with a gene to form an expression cassette and inserting the expression cassette into the gymnosperm to thereby produce a modified genome in the gymnosperm containing genes which code for enzymes which produce syringyl lignin monomer units.

2. The method of claim 1, further comprising incorporating a genetic sequence which codes for anti-sense mRNA into tile gymnosperm in order to suppress formation of guaiacyl lignin monomer units.

3. A gymnosperms plant containing an expression cassette produced according to the method of claim 1.

4. A loblolly pine containing an expression cassette produced according to the method of claim 1.

5. The method of claim 1 wherein the angiosperm DNA sequences are selected from the class consisting of 4-coumarate CoA ligase (4CL), bifunctional-O-methyl transferase (bi-OMT) and ferulic acid-5-hydroxylase (FA5H-1 and FA5H-2).

6. The method of claim 1 wherein the promoter region is selected from the class consisting of the 5' flanking region of phenylalanine ammonia-lyase (PAL) and the 5' flanking region of 4-coumarate CoA ligase (4CL1B and 4CL3B).

7. The method of claim 1 wherein the expression cassette is inserted into the gymnosperm genome by way of the transformation vector Agrobacterium.

8. The method of claim 7 wherein the Agrobacterium is Agrobacterium tumefaciens EH101.

9. The method of claim 1 wherein the expression cassette is inserted into the gymnosperm genome via direct DNA delivery to a target cell.

10. The method of claim 1 wherein expression cassette is inserted into the gymnosperm genome by micro-projectile bombardment of a gymnosperm cell.

11. The method of claim 1 wherein the expression cassette is inserted into the gymnosperm genome by electroporation of a gymnosperm cell.

12. The method of claim 1 wherein the expression cassette is inserted into the gymnosperm genome via silicon carbide whiskers.

13. The method of claim 1 wherein the expression cassette is inserted into the gymnosperm genome via transformed protoplast.

14. The method of claim 1 further comprising inserting a selectable marker into the expression cassette.

15. The method of claim 14 wherein the selectable marker is selected from the group consisting of kanamycin and hygromycin B.

16. The method of claim 2 wherein the anti-sense mRNA is a gymnosperm genetic sequence which codes for the 4-coumarate CoA ligase (4CL) gene.

17. The method of claim 1 wherein the promoter region is a DNA sequence which includes the 5' flanking region of the gymnosperm loblolly pine PAL gene.

18. The method of claim 1 wherein the promoter, region is a DNA sequence which includes the 5' flanking region of the gymnosperm loblolly pine 4CL1B gene.

19. The method of claim 1 wherein the promoter, region is a DNA sequence which includes the 5' flanking region of the gymnosperm loblolly pine 4CL3B gene.

20. The method of claim 1 wherein the promoter region includes a constitutive promoter.

21. An isolated FA5H-1 DNA sequence which encodes an enzyme involved in the biosynthesis of syringyl lignin monomer units, wherein said DNA is as shown in SEQ ID. No. 1.

22. An isolated FA5H-2 DNA sequence which encodes an enzyme involved in the biosynthesis of syringyl lignin monomer units, wherein said DNA is as shown in SEQ ID. No. 2.

23. An isolated bi-OMT DNA sequence which encodes an enzyme involved in the biosynthesis of syringyl lignin monomer units, wherein said DNA is as shown in SEQ ID. No. 3.

24. An isolated 4CL DNA, sequence which encodes an enzyme involved in the biosynthesis of syringyl lignin monomer units, wherein said DNA is as shown in SEQ ID. No. 4.

25. An isolated DNA, wherein said DNA encodes for an enzyme involved in the biosynthesis one or more syringyl lignin monomer units.

26. An isolated DNA sequence which includes the 5' flanking region of the gymnosperm loblolly pine PAL gene, containing the lignin promoter region and regulatory elements for gymnosperm lignin biosynthesis as shown in SEQ ID No. 5.

27. An isolated DNA sequence which includes the 5' flanking region of the gymnosperm loblolly pine 4C1B, containing the lignin promoter region and regulatory elements for gymnosperm lignin biosynthesis as shown in SEQ ID No. 6.

28. An isolated DNA sequence which includes the 5' flanking region of gymnosperm loblolly pine 4CL3H, containing the lignin promoter region and regulatory elements for gymnosperm lignin biosynthesis as shown in SEQ ID No. 7.

29. An isolated DNA, wherein said DNA includes the promoter region of a gymnosperm gene involved in syringyl lignin biosynthesis.

30. A method for modifying the genome of loblolly pine which comprises cloning one or more angiosperm DNA sequences which code for enzymes necessary for production of syringyl lignin monomer units, fusing one of more of the angiosperm DNA sequences to a promoter region to form an expression cassette, and inserting the expression cassette into the loblolly pine genome to thereby produce a modified genome in the loblolly pine containing genes which code for enzymes which produce syringyl lignin monomer units.

31. The method of claim 30 wherein the promoter region is a constitutive promoter.

32. A loblolly pine containing an expression cassette produced according to claim 30.

33. The method of claim 30 wherein the angiosperm DNA sequence is selected from the class consisting of 4-coumarate CoA ligase (4CL), bifunctional-O-methyl transferase (bi-OMT) and ferulic acid-5-hydroxylase (FA5H-1 and FA5H-9)

34. A loblolly pine containing one or more of the DNA sequences of claim 33.

35. A loblolly pile containing the angiosperm DNA sequence inserted by the method of claim 30.

36. A method for modifying the genome of loblolly pine which comprises cloning the sweetgum FA5H-1 gene, fusing it to a constitutive promoter to form an expression cassette, and inserting the expression cassette into the loblolly pine genome.

37. A loblolly pine containing tile FA5H-1 gene.

38. A method for modifying the genome of loblolly pine which comprises cloning the sweetgum FA5H-2 gene, fusing it to a constitutive promoter to form an expression cassette, and inserting the expression cassette into the loblolly pine genome.

39. A loblolly pine containing the FA5H-2 gene.

40. A method for modifying the genome of a gymnosperm which comprises cloning the sweetgum FA5H-1 gene, fusing it to a constitutive promoter to form an expression cassette, and inserting the expression cassette into the loblolly pine genome.

41. A method for modifying the genome of a gymnosperm which comprises cloning the sweetgum FA5H-2 gene, fusing it to a constitutive promoter to form an expression cassette, and inserting the expression cassette into the loblolly pine genome.

42. A gymnosperm containing the FA5H-1 gene.

43. A gymnosperm containing the FA5H-2 gene.

44. A gymnosperm containing a DNA sequence selected from the class consisting of the FA5H-1 DNA sequence of SEQ ID No. 1, the FA5H-2 DNA sequence of SEQ ID No. 2, the OMT DNA sequence of SEQ ID No. 3, and the 4CL DNA sequences of SEQ ID No. 4.

45. The gymnosperm of claim 38, further comprising syringyl lignin.